

REMARKS

Favorable consideration and allowance of the subject application are respectfully solicited in view of the following remarks.

Claims 9-16 and 18-22 are pending in this application, with Claims 9, 14 and 18 being independent. It is noted that Claims 9-13 have not been cancelled, but have been withdrawn from consideration.

Claims 14-16 and 18-22 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Hida et al. (U.S. Patent No. 4,841,134) in view of Nakajima et al. (U.S. Patent No. 5,254,525), and further in view of Sei et al. (U.S. Patent No. 5,786,055). Applicants respectfully request reconsideration of this rejection.

Before addressing the merits of the rejection, Applicants believe it will be helpful to review some features and advantages of the claimed invention. The present invention, as recited in Claim 14, relates to an information recording medium comprising an electronic information storing circuit part, a base material and an ink-receiving layer, in this order. The recording medium further comprises a barrier layer between the circuit part and the base material, so as to prevent ink applied to the ink receiving layer from reaching the electronic information storing part. The concentration of ionic chlorine in the barrier layer material is 100 ppm or less.

The present invention, as recited in amended Claim 18, also relates to an information recording medium comprising an electronic information storing circuit part and an ink-receiving layer, in this order. The recording medium further comprises a barrier layer that has a concentration of ionic chlorine of 100 ppm or less. The barrier layer is provided between

the electronic information storing circuit part and the ink receiving layer, so as to prevent ink applied to the ink receiving layer from reaching the circuit part.

The purpose of the barrier layer is to prevent ink that remains on an image recording portion from coming into contact with the circuit part. Contact with water, acid, alkali, etc., in the ink would cause deterioration of the circuit part. Moreover, when the concentration of ionic chlorine in the barrier layer material is 100 ppm or less, corrosion of the circuit part is unlikely to occur. If the concentration of ionic chlorine exceeds 100 ppm, water in the ink causes sodium chloride or the like to dissociate and migrate, so that corrosion is likely to occur on a non-contact storage element due to chemical or electrical reactions. (See page 13, line 23 to page 14, line 4 of the specification.) In Applicants' view, none of the cited references teaches or suggests the barrier layer as claimed in the present invention.

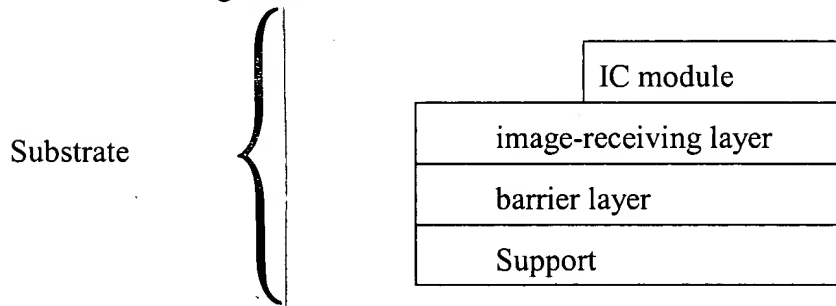
Hida et al. discloses providing an IC card with a reinforcing sheet to provide mechanical strength and flexibility to the card, and suggests that printing may be carried out on the back of the substrate of the IC card. Hida et al., however, is not seen to (1) teach providing an ink-receiving layer or (2) recognize the adverse effects of ink on IC modules. In contrast, objects of the present invention include providing an ink recording medium having an electronic information recording part, and solving problems caused in the electronic information recording part when conducting recording with ink. To achieve these objects, a special barrier layer is provided to form a barrier between the ink and the circuit part.

Nakajima et al. discloses a thermal transfer-type ID card that is provided with a barrier layer comprising a hydrophilic binder or the like to prevent dye from diffusing into the support and to prevent dye blurs in the support (col. 15, lines 23-27). Applicants submit that if

the barrier layer disclosed in Nakajima et al. were to be used as the ink/circuit-part barrier structure as recited in the present invention, absorption of a large amount of remaining ink components on an unfixed portion would be promoted, which would result in deterioration of the circuit part.

Moreover, Nakajima et al. does not teach or suggest the structure claimed in the present invention. Nakajima et al. discusses the “substrate” (col. 9, line 19 et seq.) and the “support” (col. 10, line 26 et seq.) separately. The “substrate” comprises the “support” and the “image-receiving layer” (col. 9, line 60 et seq.). The barrier layer is arranged between the “support” and the “image-receiving layer” (col. 15, line 14). Nakajima et al. further discloses that IC memories, etc. can be provided on the “substrate” (col. 10, lines 17 and 55).

Applicants submit that the structure disclosed by Nakajima et al. can be shown as in the following illustration.



Applicants therefore conclude that Nakajima et al. does not teach or suggest the concept of using a barrier layer as a barrier between an ink-receiving layer and a circuit.

Sei et al. states that, to improve electrical insulation reliability, it is required to completely remove chloride ion from an adhesive for semiconductors. This reference does not, however, mention corrosion of a circuit part caused by contact with ink. Water contained in an ink causes dissociation and migration of sodium chloride, etc., thus increasing the possibility of

corrosion on a non-contact storage element. In the present invention, such increased possibility of corrosion is suppressed by controlling the concentration of ionic chlorine to be 100 ppm or less.

Applicants submit that it would not have been obvious for a person skilled in the art to combine Nakajima et al. or Sei et al. with Hida et al., which does not have an ink-receiving layer. Even if one were to attempt such combination, it would not result in the structural features of the present invention. None of the cited references discloses the structural feature of the present invention (namely, the electronic circuit/barrier/ink-receiving layer arrangement). Applicants further note that the purpose and effect of the barrier layer as employed in the cited references are different from those of the barrier layer as employed in the present invention.

Applicants conclude that the combination of these three references, even assuming that it is proper to combine them, does not teach or suggest the claimed invention. Accordingly, Applicants submit that Claims 14 and 18 are not anticipated by, or obvious over, Hida et al., Nakajima et al., or Sei et al., either singly or in combination.

Applicants submit that the present invention is patentably defined by independent Claims 14 and 18. The dependent claims are allowable for the same reasons as their respective independent claims, as well as for the patentable features recited therein. Individual consideration of the dependent claims is respectfully solicited.

Applicants submit that this application is in condition for allowance. Withdrawal of the above-noted rejection, rejoinder of the withdrawn claims, and issuance of a Notice of Allowance are respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, reading "Jean K. Dudek". The signature is written in a cursive style with a horizontal line underneath the name.

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